

Amendments to the Claims

For the convenience of the Examiner and Applicants, all claims and any amendments are presented herein in the permitted revised format pursuant to USPTO ANNOUNCES PROTOTYPE OF IMAGE PROCESSING, 1265 Off. Gaz. Pat. Office 87 (17 December 2002) below:

1. (Currently Amended): A powerplane for use in a backplane power distribution system, comprising:

- (a) a conductive sheet;
- (b) at least one source location on said conductive sheet for coupling to a power source;
- (c) a plurality of load locations on said conductive sheet for coupling to at least one load;
- (d) a plurality of ~~variable resistances~~ resistance variations in the thickness of said conductive sheet between said at least one source location and said plurality of load locations ~~to distribute so that~~ substantially the same amount of current is distributed to each of said plurality of load locations from said power source coupled to at least one source location ~~to each of said plurality of load locations.~~

1 2.(Previously Amended): A powerplane according to claim 1, wherein said
2 powerplane includes a plurality of load pins and at least one source pin and wherein
3 said at least one source location and said plurality of load locations comprise vias for
4 receiving a corresponding one of said at least one source pin and said load pins, at
5 least a portion of said vias having plated perimeters for electrically connecting said
6 powerplane to said load pins and source pins.

1 3.(Original): A powerplane according to claim 1, wherein said conductive sheet
2 comprises copper.

1 4.(Currently Amended): A backplane power distribution system for distributing
2 power from a power source, comprising:
3 a laminate having
4 a plurality of interleaved dielectric layers and conductive layers wherein
5 at least one of said conductive layers is a powerplane for distributing said
6 power; and
7 a plurality of source locations and load locations, said source locations
8 being provided to couple said powerplane to said power source and said load
9 locations being provided to couple said powerplane to at least one load,
10 a plurality of ~~variable resistances~~ resistance variations arranged ~~on~~
11 within the thickness of said powerplane to distribute current so the voltage
12 difference between said load locations is reduced to near zero.

1 5.(Previously Amended): A backplane power distribution system according to claim
2 4, wherein said source locations and said load locations define a plurality of holes
3 passing through said laminate, said holes forming vias in each of said layers of said
4 laminate, said vias being adapted to couple said powerplane to said loads and said
5 power source.

1 6.(Previously Amended): A backplane power distribution system according to claim
2 5, wherein said laminate further includes source pins and load pins, and wherein a
3 first number of said vias in at least one of said conductive layers are provided with
4 plated perimeters for connection to said load pins and said source pins and a second
5 number of said vias in said at least one of said conductive layer are provided with an
6 insulated perimeter for insulating said second number of vias from said load pins
7 and source pins.

1 7.(Previously Amended): A backplane power distribution system according to claim
2 4, wherein said conductive layers comprise copper.

1 8.(Previously Amended): A backplane power distribution system according to claim
2 4, wherein said load locations are provided to couple said powerplane to at least one
3 circuit board.

1 9.(Currently Amended): A powerplane for use in a backplane power distribution
2 system, comprising:

3 (a) a conductive sheet;

4 (b) means to electrically couple a power source to said conductive sheet;

5 (c) means to electrically couple at least one load to said conductive sheet;

6 (d) means within the thickness of said conductive sheet to distribute

7 substantially the same amount of current from said power source to all of said

8 coupled at least one load.

1 10.(Original): The powerplane of Claim 9, wherein said conductive sheet is
2 copper.

1 11.(Previously Amended): The powerplane of Claim 9, wherein said means to couple
2 said power source and said means to couple said at least one load to said conductive
3 sheet are selected from the group comprising: connector straps, pads, and vias
4 which receive a plurality of source pins and a plurality of load pins.

1 12.(Currently Amended): The powerplane of Claim 9, wherein said means to
2 distribute substantially the same amount of current further comprises a plurality of
3 resistance variations ~~in the structure~~ within the thickness of the powerplane.

1 13.(Currently Amended): The powerplane of Claim 11, wherein

2 said plurality of load locations further comprises near load locations
3 and distant load locations with said near load locations being nearer to said
4 plurality of source locations than said distant load locations, and

5 wherein said means to distribute substantially the same amount of
6 current further comprises:

7 means within the thickness of said powerplane to variably
8 increase the resistance of the powerplane between said plurality of
9 source locations and said load locations, and

10 means within the thickness of said powerplane to substantially
11 reduce the voltage difference between said near load locations and said
12 distant load locations.

1 14.(Currently Amended): A powerplane for use in a backplane power distribution
2 system, comprising:

3 (a) a conductive sheet;

4 (b) at least one source location on said conductive sheet for coupling to a
5 power source;

6 (c) a plurality of load locations on said conductive sheet for coupling to at
7 least one load;

8 (d) a plurality of circular and ~~non-noncircular resistances disposed on~~
9 resistance variations within the thickness of said conductive sheet at an
10 angle other than parallel or perpendicular to so that the current from

11 the coupled power source at said at least one source location to all of
12 said loads coupled to said plurality of load locations is substantially
13 equal.

1 15.(New): The powerplane of claim 14, wherein said resistance variations are
2 voids within the plane of said conductive sheet.

1 16.(New): The powerplane of claim 14, wherein said resistance variations are
2 areas of increased thickness of said conductive sheet.

1 17.(New): The powerplane of claim 14, wherein said resistance variations are
2 materials having a greater resistance than said conductive sheet situated within the
3 thickness of said conductive sheet.